



## Product: DMR27U



DMR27U\_RM



#### CAUTION

*Operate this device only in environments where the temperature or humidity is within the recommended range. Operation in extreme temperatures or humidity levels may cause electric shock and shorten the life of the product.*



#### CAUTION

*Installation and servicing should be performed by qualified and experienced personnel only. DVR should always remain OFF during any installation process.*



#### CAUTION

*Do not use the camera if fumes, smoke or a strange odor is emitted from the unit, or if it seems to function incorrectly. Disconnect the power source immediately, and consult your dealer.*

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## SECTION 1

# Product Description

The DMR27U is a professional, security grade, real-time, 4-channel digital video recorder. It includes H.264 digital technology providing increased recording capacity, enhanced image quality, and faster video transfer for remote viewing. Recording can be triggered manually, by alarm, by motion detection, or by a preset timer. User friendly on-screen menu displays provide controls for color, brightness and contrast for each camera. The optional 1TB SATA hard drive can store up to 7200 hours of video recorded from all 4 channels.

## 1.1 Features

Your DVR includes the following special features:

- 4-channel, real-time live display and 4-channel simultaneous playback
- H.264 technology — Advanced recorded picture quality and data compression
- TRIPLEX — Simultaneous recording, playback, and remote viewing (networking).
- NaFS file system developed for preventing data loss from power failures
- Real Time Operating System and simplified hardware with a watchdog timer to ensure reliability
- Individual channel recording and playback with different frame rates
- High-quality live and playback resolution
- Multi-site management supported by CMS application
- Network via LAN, DHCP, DDNS, ADSL. Dynamic and static IP addresses supported
- User-friendly setup menu with graphic user interface
- Easy to implement weekly recording schedule
- On-screen display (OSD) icons provide helpful and well-explained information
- Motion detection within a 14 x 10 motion zone grid (each camera)
- USB port for JPEG, H.264 data backup and software upgrade using a USB memory stick
- Still image capture and review in JPEG format
- Operating controls on the front panel and remote control
- Password required for access
- Video loss detection
- Backup allows still-images and AVI data copying to a USB memory stick or network drive
- Multi-Language support



### 1.2 Components

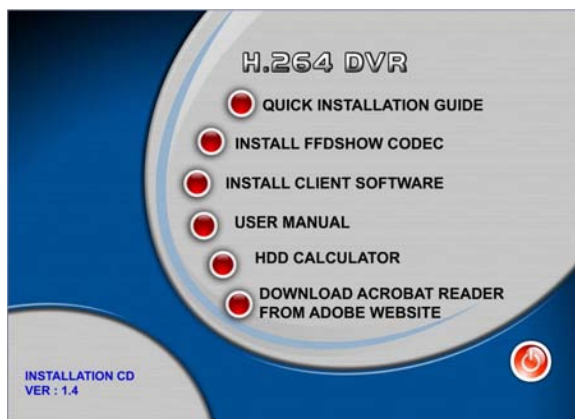
The DVR package contains the following items:

- DVR unit
- QSG (Quick Setup Guide)
- DVR power adapter
- Power cord
- Remote control
- AAA batteries (2)
- Software CD

#### 1.2.1 Software CD

The software CD included with your DVR contains:

- Quick Installation Guide
- FFDSHOW codec (see Appendix B)
- Client Software (MClient, see Section 7)
- User manual (this document)
- HDD calculator — for determining recording capacity of your hard disk drive
- Link to download Adobe Acrobat Reader for viewing documentation



## SECTION 2

## Hardware Overview

## 2.1 Front panel

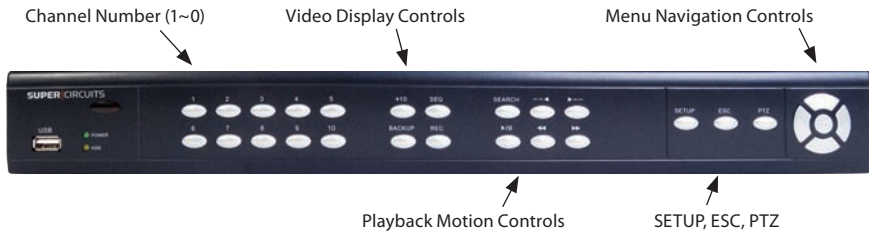


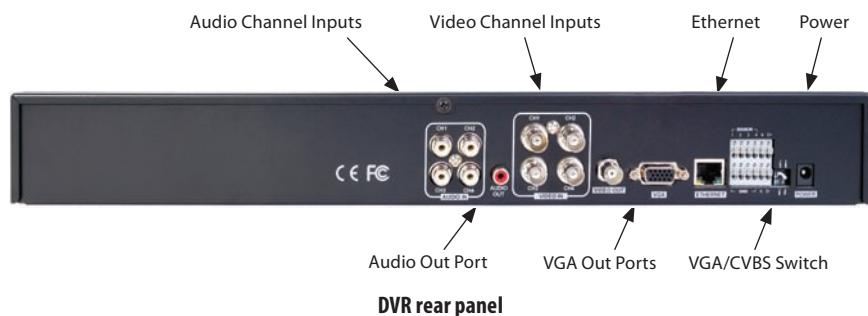
Table 1. DVR front panel controls

Name	Description
NUMBER (1~0)	Select channel with number button (1 ~ 4 only)
SEQ	Auto sequence of channels in full screen mode. (Toggle)
PTZ	Enter PTZ (Pan, Tilt, Zoom) mode for PTZ enabled cameras
SETUP	Enter SYSTEM SETUP menu
SEARCH	Enter Search menu.--> Event search / Timeline search / Log / Archive search
▶/	Can be use as "Play" and "Pause" function during playback
BACKUP	Archive in LIVE (backup Live picture) or PLAYBACK (backup picture and video) modes.
◀◀	Rewind the footage at 1x, 2x, and 4x speed in PLAYBACK mode.
◄◄	Jump/Step backward. – In PLAYBACK mode, the playback position moves 60 seconds backward
▶▶	Jump/Step forward – In PLAYBACK mode, the playback position moves 60 seconds forward.
▶▶▶	Fast forward the footage at 1x, 2x, and 4x speeds in PLAYBACK mode
REC	Start and stop recording manually
UP (▲)	Scroll up in the system menu or select camera 1 in LIVE mode. It is also used to enter the number 1.
RIGHT (▶)	Move right, change values in system menu, or select camera 2 in LIVE mode. It is also used to enter the number 2.
DOWN (▼)	Scroll down in the system menu or select camera 3 in LIVE mode. It is also used to enter the number 3.
LEFT (◀)	Move left, change values in system menu, or select camera 4 in LIVE mode. Also used to enter the number 4.
Enter	Select full screen or quad view in LIVE display mode
ESC	Return or cancel command

**Table 2. Front panel LEDs and connectors**

Name	Description
HDD	Solid light when DVR is accessing the hard disk.
POWER	Solid light when DVR is powered on.
USB	USB port for backup and software updates.

## 2.2 Backpanel

**Table 3. Rear panel connectors and switches**

Label	Operation
VIDEO IN	4 channel connectors for video input. Connect camera output to Video-in.
VIDEO OUT	1 connector for video output.
VGA	Connector for VGA monitor
AUDIO	Audio 1~4:AUDIO IN/AUDIO OUT
SENSOR IN	Connection for sensor device
ALARM OUT	1 alarm device output. Provides simple On/Off switching by using relay. 0.5A/125V, 1A/30V
RS-485	Connect to PTZ camera, + →PTZ D+ . - →PTZ D-
LAN	RJ-45 connector for LAN connection
DC 12V	Apply 12V DC using the DC adapter supplied with the recorder
VGA / CVBS switch	Select either VGA monitor or CVBS (Composite Video Blanking Sync) monitor. DO NOT CHANGE THIS SETTING WHEN DVR IS ON. DVR MUST REBOOT IF THIS SWITCH IS CHANGED.
T-ON/ T-OFF switch	For manufacture use only



## 2.3 DVR Hard disk drive

The hard disk drive (HDD) included in your system is a security grade device, factory tested and certified to be functional for all operations of the DVR.



*Do not open the cover of your DVR. Opening the cover will void the warranty.*

If you need to change the HDD installed in your DVR (voids warranty), refer to the HDD Compatibility List in Appendix A for recommended models.

## 2.4 Remote control

**Table 4. Remote control controls**

Button	Description
ID	DVR ID setup
REC	Record manually
NUMBER	Press number button to select channel
◀◀	Fast Rewind
▶▶	Fast Forward
▶/II	Play/Pause
▶--	PTZ / Jump/Step forward
--◀	Jump/Step backward
SEL	Enter
DIRECTION	Direction or number 1 to 4
SETUP	Setup menu screen
SEARCH	Search menu screen
ESC	Esc
BACKUP	Archive and backup still image or video clip.
SEQ	Sequential channel conversion





### SECTION 3

## System Setup

Use the SETUP menu options to configure your DVR to perform optimally within your installation environment and to meet your specific security needs.

### 3.1 SETUP screen

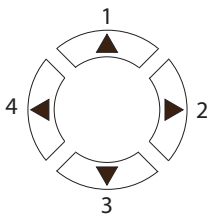
After pressing the **SETUP** button, the DVR will prompt you for password. The default password is 1111.



#### CAUTION

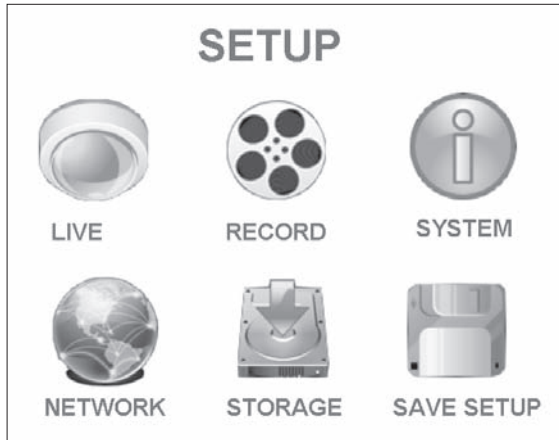
*Supercircuits highly recommends that the DVR password be changed during initial setup.*

Use the menu navigation buttons (up ▲, right ►, down ▼, and left ◄ representing 1, 2, 3, and 4 respectively) or the number keys to enter the password, then press **ENTER** for password validation.



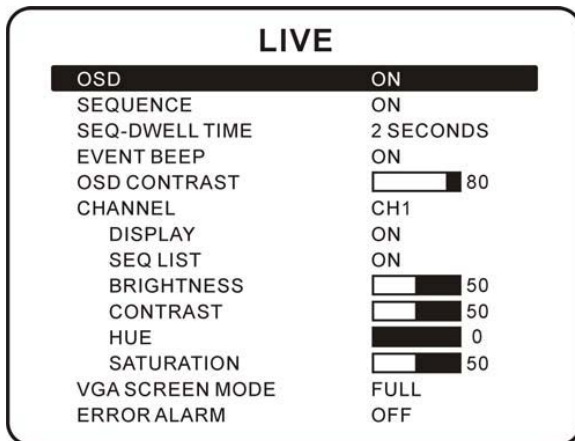
**Menu navigation buttons**

After the password is entered, the SETUP icons will appear. Use the navigate buttons to select a SETUP item. Press **ENTER** to open the menu and set options.



## 3.2 LIVE mode setup options

In the LIVE mode menu you can adjust how video images from the cameras appear on the monitor. Navigate through the menu items by pressing the ▲ and ▼ buttons. Use the ◀ and ▶ buttons to modify a setting.



Setup LIVE screen

**Table 5. Menu items in LIVE mode setup**

Item	Description
OSD	Enable/disable on-screen displays (OSD).
SEQUENCE	Enable/disable sequential display of video channels in full screen mode.
SEQ-DWELL TIME	Dwell time for each channel display in sequential display mode.
EVENT BEEP	Enable/disable internal beep alert sound.
OSD CONTRAST	Set the visibility level of the OSD.
CHANNEL	Select the channel for applying the following settings.
DISPLAY	Enable/disable display of the video channel in LIVE mode.
SEQ LIST	Enable/disable the specified channel shown in sequential display mode.
BRIGHTNESS	Change the brightness level for the specified channel.
CONTRAST	Change the contrast level for the specified channel.
HUE	Change the hue level for the specified channel.
SATURATION	Change the saturation level for the specified channel.
VGA SCREEN MODE	Select VGA screen mode as either FULL or Normal.

**Table 6. Event BEEP alarm/motion function**

	Event Beep On		Event Beep Off	
	Buzzer	Relay Out	Buzzer	Relay Out
Alarm	Yes	Yes	No	Yes
Motion	Yes	Yes	No	Yes

**NOTE**

*The “Event Beep” function is NOT related to relay output. Relay output is setup in the RECORD menu.*

### 3.3 RECORD setup options

Set the options for recording video from each channel. Navigate through menu items by pressing the ▲ and ▼ buttons. Change the value of the menu item with the ◀ and ▶ buttons.



RECORD	
RESOLUTION	320 x 240
CHANNEL	CH1
FRAME RATE	30 f/s
QUALITY	HIGH
RECORDING	CONTINUOUS
MOTION ZONE	PARTIAL ZONE
MOTION SENSITIVITY	7
SENSOR TYPE	* ---
PRE RECORD	ON
POST EVENT RECORD	ON
ALARM	5 SECONDS
ALARM DURATION	OFF
AUDIO	5 SECONDS
SCHEDULE	OFF

Setup RECORD screen

Table 7. Menu items in Setup RECORD

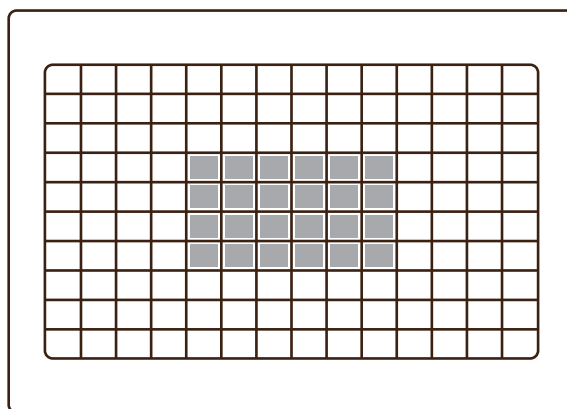
Menu item	Description
RESOLUTION	Set resolution to either 704 x 480 or 352 x 240
CHANNEL	Select the camera channel for which these settings apply
FRAME RATE	Set the frame rate for the specified channel. The sum of the frames rates of all channels cannot exceed maximum frame rate for the resolution selected. Maximum frame rates are 120 fps for 352 x 240 resolution and 30 fps for 704 x 480 resolution.
QUALITY	Select the recording quality for the specified channel from NORMAL / HIGH / SUPER.
RECORDING	Assign the recording mode for each channel: CONTINUOUS / BY MOTION / BY SENSOR / BY SCHEDULE / DISABLE.
MOTION ZONE	Select FULL ZONE or PARTIAL ZONE motion sensing. If PARTIAL ZONE is chosen, the screen changes to enable/disable motion sensing in each of 140 (14 x 10) image segments.
MOTION SENSITIVITY	Set the motion sensitivity for the specified channel. Adjust the motion sensitivity from 1 to 9.
SENSOR TYPE	Set the sensor type for the channel to either "—" (none), N/O (normal open), or N/C (normal closed).
PRE RECORD	Enable/disable pre-event recording. Pre-event recording time is 3 sec. Only intra-frames are recorded for pre-event recording.
POST EVENT RECORD	Set post event recording time duration up to 30 seconds for the specified channel
ALARM	Enable/disable alarm generation for the specified channel
ALARM DURATION	Set alarm time duration for the specified channel
AUDIO	Enable/disable audio for the specified channel
SCHEDULE	Set recording schedule

**NOTE**

*To receive smooth video during playback, set the frame rate of each channel for more than 3 fps. Switch to full screen during playback when audio recording is enabled.*

### 3.3.1 PARTIAL ZONE settings

After selecting PARTIAL ZONE in the MOTION ZONE menu, select the portion of the camera video within which motion sensing will occur. Each block in the MOTION ZONE display shown below represents a specific segment of the camera video image. Use the navigation buttons on the front panel to move to each block, and press **Enter** button to enable or disable motion sensing in that portion of the video. Areas selected for motion sensing are indicated by a color change of the block. By default, only the area in the middle of the camera video is monitored for motion.



**Motion Zone selection screen with default selections**

### 3.3.2 RECORD SCHEDULE

Select SCHEDULE in the RECORD menu to setup the record schedule for the camera channel. In the SCHEDULE menu, use the navigation buttons on the front panel to move to each option on the screen.

[ALL]: Press **Enter** to apply to the entire time zone and all channels.

[SUN to SAT]: Press **Enter** to apply to the entire time zone for the specified channel.

[ENTER]: When a time slot is selected, press **ENTER** repeatedly to cycle through the options **C** (continuous), **M** (motion), **S** (sensor), or disable recording mode.



[COPY FROM, COPY TO]: Copy the Record schedule of one channel to another channel.

[ESC]: Return to the RECORD setup menu.

SCHEDULE-CH1	
COPY FROM	CH1
COPY TO	CH1
ALL	0 3 6 9 12 15 18 21 24
SUN	- - - - -
MON	- - - - -
TUE	- - - - -
WED	- - - - -
THU	- - - - -
FRI	- - - - -
SAT	- - - - -


SCHEDULE recording setup screen

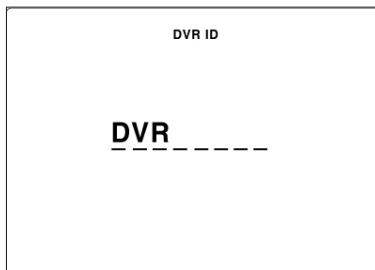
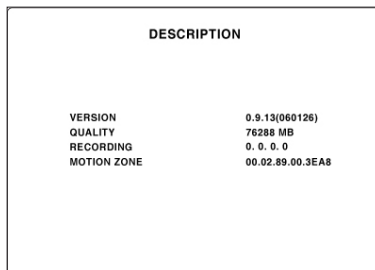
### 3.4 SYSTEM SETUP mode

SYSTEM	
DVR ID	DVR
DESCRIPTION	
LOAD DEFAULT	
ADMIN PASSWORD	
NETWORK PASSWORD	
DATE FORMAT	YYYY/MM/DD
SET DATE&TIME	
PTZ CONTROL	
LANGUAGE	ENGLISH
REMOTE CONTROLLER ID	0
<b>DLS</b>	<b>ON</b>
BEGIN	MAR 1ST MON 00H
END	SEP 1ST MON 00H

SYSTEM setup screen

**Table 8. Menu items in SYSTEM SETUP screen**

Item	Description
DVR ID	The name of the system. Press the <b>ENTER</b> to select this item. Select a character position with the ▲ and ▼ buttons. Press ◀ or ▶ to change the character.
DESCRIPTION	Press <b>ENTER</b> to see system information.
LOAD DEFAULT	Choose OFF or ON. If selecting ON, press <b>ENTER</b> to load defaults.
ADMIN PASSWORD	Set the administrator password. The password numbers (1,2,3,4) can be entered with the direction keys or number keys. The default password is 1111.
NETWORK PASSWORD	Set the network client password. The password numbers (1,2,3,4) can be entered with the direction keys or number keys. The default password is 1111.
DATE FORMAT	Select the preferred date and time display format.
SET DATE & TIME	Set the present date and time. If DLS (daylight savings) is ON, user can not enter this menu or change the date and time.
PTZ CONTROL	Set the camera speed, number, type and ID.
KEY TONE	Enable/disable the key tone.
LANGUAGE	Select system language.
REMOTE CONTROL ID	Select the ID of the remote control. (Default is 0). 1. Select ID from 0 to 9. 2. On a remote control, press the same number as the remote control ID set in DVR. 3. The  icon is displayed in the LIVE screen of the DVR that responds to the remote control.
DLS	Set to ON or OFF for DLS (Daylight Saving) using the ◀ or ▶ buttons. After selecting ON, move the cursor to BEGIN (MM/DD/HH) and press the SELECT button to set the start time of DLS. Move to END (MM/DD/HH) using ▲ or ▼ button to set the stop time of DLS. <b>CAUTION:</b> DLS can't start from 23:00. Also, DLS can't be applied if the BEGIN and END dates are the same.

**DVR ID setup screen****Description display screen**





DATE & TIME	PTZ CONTROL
2 0 0 6 / 0 3 / 1 3      1 7 : 4 6 : 2 0	CAMREA SPEED      19200 14400 9600 4800 2400 CAMREA NUMBER      1 2 3 4 CAMERA TYPE      ---- CAMERA ID      0

DATE &amp; TIME setup screen

PTZ CONTROL screen

### 3.5 NETWORK setup

Setup network parameters on the NETWORK setup screen.

NETWORK	
PORT	5445
WEB PORT	80
CLIENT ACCESS	ON
BANDWIDTH SAVING	OFF
NETWORK TYPE	LAN
IP	192.168.1.230
GATEWAY	255.255.255.0
SUBNET MASK	192.168.1.1
DNS SERVER IP	168.95.1.1
<b>DDNS</b>	<b>ON</b>
DOMAIN	abab12.dyndn
ID	aabb
PASSWORD	bbbaaa
INTERVAL	A-00 H-00 M-10
STATUS	nochg
SEND E-MAIL	ON

NETWORK setup screen

**Table 9. Menu items in the NETWORK setup screen**

Item	Description
PORT	Video Port number (default:8000); BACKUP port number is PORT number + 1.
WEB PORT	IE Browser port number (default: 80)



Item	Description
CLIENT ACCESS	Set to ON or OFF to enable or disable remote access through client software.
BANDWIDTH SAVING	Set to ON or OFF for key frame transmission. ON is favorable for use in low-bandwidth networks. Set to OFF for normal use.
NETWORK TYPE	Set the type of network connection: LAN, DHCP, or ADSL. <b>NOTE:</b> Options presented on the Network Setup screen support the type of network selected.
DHCP	When DHCP is selected, the DVR gets its IP address from a DHCP server. The IP address may change occasionally.
ADSL (PPPoE)	A registered ID and Password are required for an ADSL connection.
LAN	IP: Register IP address that is assigned to the DVR. Gateway: Register Network Gateway. Subnet Mask: Register Network Subnet Mask. DNS Server IP: Register Network DNS Server IP
DDNS	Support for DynDNS.com
SEND-E-MAIL	Send e-mail when IP address changes or an Event happens.

### 3.5.1 Ports

For remote access (from outside the LAN or the Internet) to one or more DVRs connected to the same IP sharing device (LAN), each DVR must be assigned a unique WEB PORT number. The WEB PORT number in the NETWORK setup screen is the port assigned to the DVR in the IP sharing device (router).

Additionally the DVR requires two additional ports on the IP sharing device: one to transmit video and the other to transmit BACKUP files. The video port number is defined in the PORT entry, and the BACKUP port number is always the PORT number +1. For instance, in the NETWORK screen shown above, the PORT number is 5445, so the DVR will use port 5446 for BACKUP.

The ports defined for a DVR, including the PORT, WEB PORT, and BACKUP (WEB PORT +1) must not be used by other device on the local network. To access the DVR from outside the local network, the network router the must be setup to “port forward” (associate) these three ports to the IP address of the DVR. For more information on port forwarding, see <http://portforward.com/>.

### 3.5.2 Network types

The DVR supports three types of networks: LAN, DHCP, and ADSL.

#### LAN

In a LAN configuration the IP address of the DVR is static (fixed). If your LAN is maintained by a network administrator, obtain the static IP address from the administrator.

#### DHCP

Select DHCP when the IP address is automatically assigned by the DHCP server. The DHCP server assigns the IP address and other parameters automatically to devices on the LAN not configured with static (unchanging) IP addresses.



## ADSL (PPPOE)

Select the Asymmetric Digital Subscriber Line (ADSL) Point to Point over Ethernet (PPPoE) option when the network type connected to the DVR is PPPoE.

**Table 10. ADSL parameters**

Item	Description
ID	The user ID for an ADSL connection
PASSWORD	The password for an ADSL connection

When the DVR is installed on an IP sharer connected with ADSL, a user can assign a static IP address to the DVR from an IP sharer using the "DMZ" function.

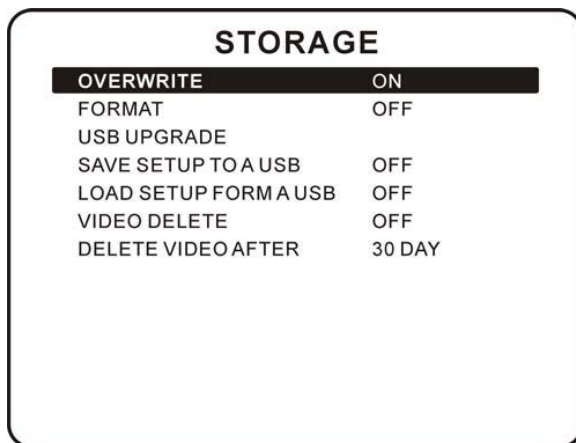
### 3.5.3 SEND E-MAIL notification options

E-mail notification options include:

- IP Notification: DVR will send an e-mail notification to recipient automatically if IP changes.
- EVENT ALARM: DVR will send an e-mail notification to recipient automatically if an event detected.
- MAIL ADDRESS: Recipient e-mail address
- MAIL SERVER name: Recipient e-mail server address
- ID: Recipient e-mail login ID
- PASSWORD: Recipient e-mail login password
- RETURN MAIL ADDRESS: Sender e-mail address

## 3.6 STORAGE mode

Set the recording mode, initiate an HDD reformat, and save setup settings to a USB device in the STORAGE setup menu.



STORAGE setup screen

Table 11. Menu items in the Storage Setup screen

Item	Description
OVERWRITE	Overwrite existing data when the hard disk drive is full
FORMAT	Format the hard disk drive
USB UPGRADE	DVR firmware can be upgraded through the USB port via USB memory stick. See paragraph 6.1.
SAVE SETUP TO A USB	User can save the DVR configuration to a USB memory stick. See paragraph 6.2.
LOAD SETUP FROM A USB	Upload/restore the DVR configuration using the USB memory stick. See paragraph 6.3.
VIDEO DELETE	Enable/disable recording limit.
DELETE VIDEO AFTER	Set the time limit for a recording to reside on the hard disk drive (from 1 to 60 days).

### 3.7 SAVE SETUP

Select **SAVE SETUP** and click **YES** to save all settings.

**NOTE**

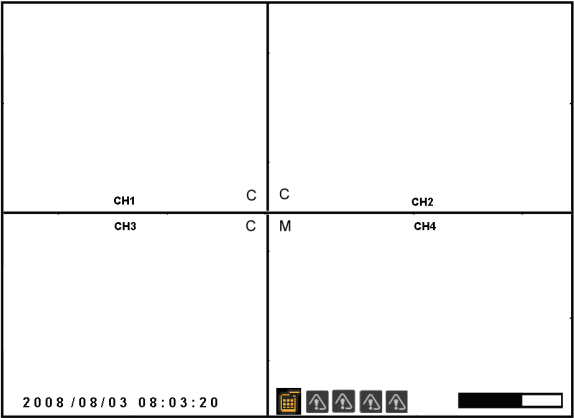
*The DVR reboots automatically when any of the following are changed: Network IP address, Time and Date, Format HDD, Load default.*



SECTION 4

# LIVE and SEARCH Modes

## 4.1 LIVE window







LIVE window

Table 12. Screen icons in LIVE window

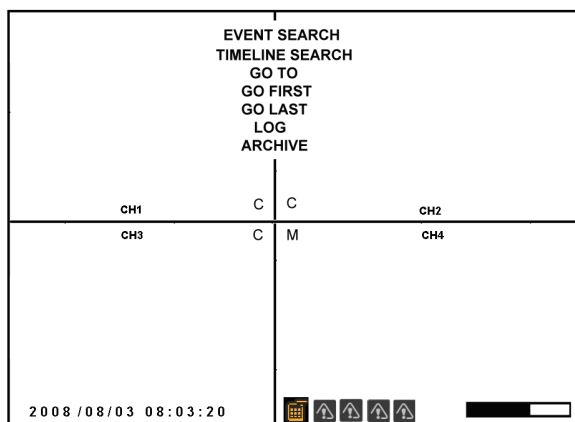
Icon	Description
C	Continuous recording in progress
R	Manual recording in progress
M	Motion recording is triggered
S	Sensor recording is triggered
	Indicates the HDD is overwriting
	Indicates alarm output is activated.
	Event indicator. When there is an alarm (sensor alarm or motion alarm) in the video channel, this icon is red.



Icon	Description
	Indicates that a network client is connecting to the DVR.
	Indicates that sequencing mode is enabled.
	Graphical representation of the fullness of the HDD.
	The icon will appear when it matches with remote control ID.

## 4.2 SEARCH window

In LIVE mode, press **SEARCH** and enter the password to open the SEARCH screen. Use the arrow buttons or remote control to enter the password.



**SEARCH window**

### 4.2.1 EVENT Search

The Event Search window is used to find stored video. Three categories of search filters can be applied: DATE, CHANNEL and TYPE. Use the **▲** and **▼** buttons move through the options and press **ENTER** to select a one. Press **ESC** to return to the previous screen.



1. In the SEARCH window, use the ▲ and ▼ buttons to move highlight EVENT SEARCH. Press **ENTER**.
2. Use the navigation buttons to move to the date of the target surveillance video event.

### SEARCH

2008-10

	1	2	3	4
5	6	7	8	9
10	11	12	13	14
15	16	17	18	19
20	21	22	23	24
25	26	27	28	29
30	31			

CHANNEL ALL 1 2 3 4

TYPE     A   M   S   R   C

SEARCH window select channel

3. Press **ENTER** to select the date to move to the CHANNEL selector.
4. Use ◀ and ▶ buttons to change the channel selection from ALL to any one of the available channels. Press **ENTER** to select the CHANNEL and move to the TYPE selector.
5. Use the ◀ and ▶ buttons to change the TYPE of recording to A (All Event Recording), M (Motion Recording), S (Sensor Recording), M (Manual Recording), or C (Continuous Recording). Press **ENTER** to show the search results.

### LIST

( 1 / 1 )

<hda> [2008/10/30 17:00:00] CH1: CONTINUOUS

<hda> [2008/10/30 17:00:00] CH2: CONTINUOUS

<hda> [2008/10/30 17:00:00] CH3: CONTINUOUS

<hda> [2008/10/30 17:00:00] CH4: CONTINUOUS

<hda> [2008/10/30 17:00:00] CH5: CONTINUOUS

<hda> [2008/10/30 17:00:00] CH6: CONTINUOUS

<hda> [2008/10/30 17:00:00] CH7: CONTINUOUS

<hda> [2008/10/30 17:00:00] CH8: CONTINUOUS

<hda> [2008/10/30 17:45:00] CH1: CONTINUOUS

LIST search criteria

6. To find the target surveillance event, use the ▲ and ▼ buttons to scroll through the listings, and the ◀ and ▶ buttons to display a list of recordings made previously to or after the current selection.

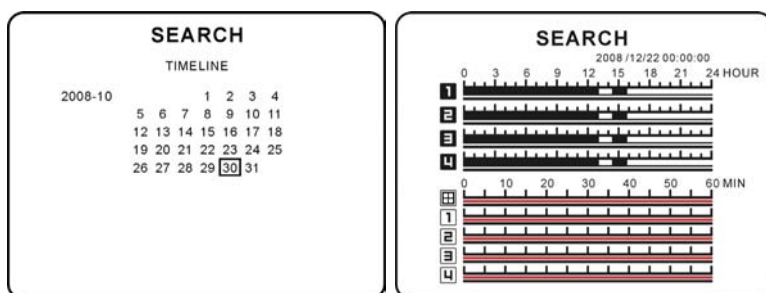


- After the target event is selected, press **ENTER** to start video playback. In **PLAYBACK** mode, you can press the **CAPTURE (BACKUP)** button to launch the archiving function.

## 4.2.2 TIMELINE Search

The **TIMELINE** search window displays a graph that show when video and audio data was recorded.

- In the **SEARCH** window, use the **▲** and **▼** buttons to highlight **TIMELINE SEARCH**. Press **ENTER**.
- In the **SEARCH TIMELINE** window, use the navigation buttons to highlight the date of the target surveillance video event.



**SEARCH date, timeline screens**

### NOTE

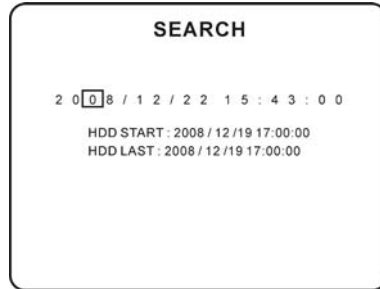
*In the **SEARCH** timeline window, the **RED** Bar indicates when video data was recorded, the **GREEN** Bar indicates when audio data was recorded.*

- Press **ENTER** to select the date and open the timeline **SEARCH** window.
- Use directional buttons to select a start time. Press **ENTER** to move to the 60 minutes time table.
- Use the **◀** and **▶** buttons to select the duration. Press **ENTER**.
- Use the **▲** and **▼** buttons to Select All, or select a specific channel to search.
- Press **ENTER** to playback the recorded video.

## 4.2.3 GO TO search

You can directly specify a day and time at which to start video playback. Use the **◀** or **▶** buttons to move across the date — time field, and **▲** or **▼** buttons to change the date and time settings.





GO TO SEARCH window

#### 4.2.4 GO FIRST time

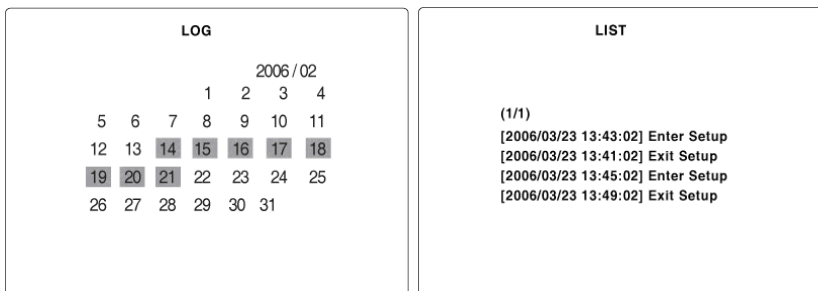
You can access the first data recorded on the HDD using this option.

#### 4.2.5 GO LAST time

You can access to the last data recorded on the HDD using this option.

#### 4.2.6 LOG

The LOG option provides a list of user actions.



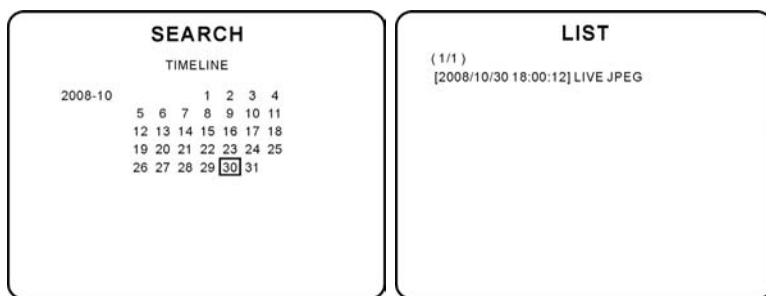
LOG option list



### 4.2.7 ARCHIVE

The ARCHIVE search window is used to find a stored video.

1. In the SEARCH window, use the ▲ and ▼ buttons to highlight ARCHIVE. Press **ENTER**.
2. In the SEARCH window, use the navigation buttons to move to the date of the archived video events. Press **ENTER** to select the date and open the LIST window.



**SEARCH Archived video**

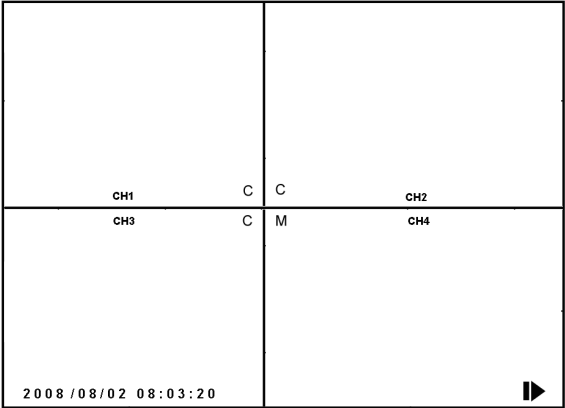
3. Use the ▲ or ▼ button to scroll through the list and find the target event.
4. Press **ENTER** to see the selected capture or video (in paused mode). Press **BACKUP** to copy the capture or video to USB memory stick. If video is being copied, select the video type (format) of the clip – AVI or DVR. After a successful backup, a SAVE SUCCESS message appears.

#### NOTE

*When saving a video clip in DVR format, Player.exe is copied to the memory stick. Use this application to watch the video clip.*


## 4.3 Play mode

Several front panel controls are useful when playing recorded video (see the table below). While playing recorded video, return to SEARCH by pressing **ESC**.



Play mode

Table 13. Button functions in Play mode

Button	Description
ESC	Return to the previous menu screen or exit from the SETUP menu
◀◀	Press to play video in reverse at 1x, 2x, and 4x speeds. Reverse playback speed is shown at the lower right corner of the screen as -1x (normal), -2x (2 times normal), and -4x (4 times normal).
▶▶	Press to play video forward at 1x, 2x, 4x, and 8x speeds. Playback speed is indicated at the lower right corner of the screen as +1x, +2x, +4x, and +8x for normal, twice, 4 times, and 8 times normal speed.
▶/	Press to play / pause recorded video.
▶--	Jump/Step forward. Playback position moves 60 seconds forward.
--◀	Jump/Step backward. Playback position moves 60 seconds backward.
	Use to select channel 1 to 4 in full screen mode or change to quad display by directional button.
ENTER	Switch between full screen and current display mode.

**SECTION 5****Archiving and Backup**

To BACKUP a still image or video clip to a USB storage device, it must first be archived on the HDD.

**5.1 Archiving still images**

Still images can be captured and archived to a USB memory stick or hard drive while in LIVE mode and while playing back recorded video. The image saved is in .jpg format, and associated with the date and time the image was captured. The USB memory stick used for backup must be formatted as FAT32.

**5.1.1 Archive and backup still images in LIVE mode**

To archive and backup still images in LIVE mode:

1. Insert a USB memory stick with FAT32 format into the USB port on the front of the DVR.
2. Press **BACKUP**. The DVR will archive the image on the screen.
3. Wait for the message SAVING or CHECK FAIL to close before removing the USB memory stick. SAVING indicates that the DVR is writing the archived file to the USB memory stick. CHECK FAIL indicates that the attempted backup to the USB memory stick failed.
4. Unplug the USB memory stick from the DVR.

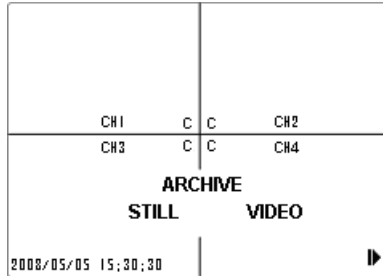
**5.1.2 ARCHIVE and BACKUP in PLAYBACK mode**

Video clips must be archived before they can be backed up. To archive recorded video:

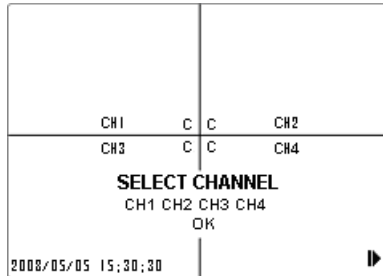
1. Insert a USB memory stick with FAT32 format into the USB port on the front of the DVR.
2. Press **SEARCH**. Use the directional buttons on the DVR to enter the password, and then press **ENTER**.
3. Use the up and down directional buttons to highlight the preferred search method: EVENT SEARCH, TIMELINE SEARCH, GO TO, GO FIRST, or GO LAST. Press **ENTER**.
4. Locate and select the video portion you want to Archive. (See "SEARCH window" in paragraph 4.2.)



5. Press **ENTER** to play the video clip.
6. Press **BACKUP**.
7. At the ARCHIVE prompt, use the left ◀ or ▶ buttons to highlight STILL or VIDEO.



8. Press **ENTER**,
9. If backing up a video clip:
  - a. Use the ◀ or ▶ buttons to highlight the channel you want to archive.



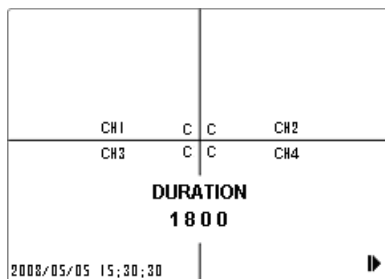
## NOTE

Only one camera can be backed up at a time.  
 Use the directional buttons to select a single channel.  
 The DVR will stop recording during backup.  
 DVR can backup up to 1800 sec. (30 min.) at a time.

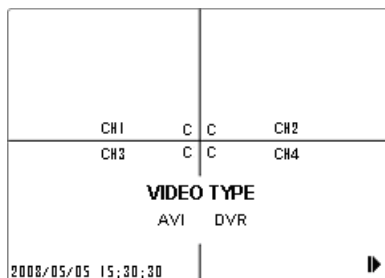
- b. Press the ▼ button to highlight **OK**. Press **ENTER**.



- c. At the DURATION prompt, enter the video clip duration in seconds by using the ◀ or ▶ buttons to select a digit, and the ▲ or ▼ buttons to select the value (0 – 9) of the digit. Maximum: 1800 seconds / 30 minutes



- d. Press **ENTER**. A VIDEO OK message will flash.
- e. When the VIDEO TYPE prompt appears, use the ◀ or ▶ buttons to highlight AVI or DVR (file format).



- f. Press **ENTER** to backup the video clip to the USB memory stick.
10. After the SAVE SUCCESS message appears, press **ESC** to exit.
11. Unplug the USB memory stick from the DVR.

## 5.2 BACKUP still images or video clip to a USB memory stick

To BACKUP a still image or video clip the data must first be archived. To perform the BACKUP:

1. Insert a USB memory stick with FAT32 format into the USB port on the front of the DVR.



2. Use Search and Archive functions to locate and play the target still image or video clip.

ARCHIVE												
2006 / 02												
				1	2	3	4					
5	6	7	8	9	10	11						
12	13	14	15	16	17	18						
19	20	21	22	23	24	25						
26	27	28	29	30	31							

CH1 C	LIST
2006/12/12	(1/2)
<15:05:24>	LIVE JPEG
<15:05:25>	CH3 AVI 10SEC

**ARCHIVE and LIST screens**

3. While the still image or video clip is playing, press **BACKUP**.
4. If backing up a video clip:
  - a. Use the ◀ or ▶ buttons to highlight AVI or DVR (file format) when VIDEO TYPE appears.
  - b. Press **ENTER** to backup the video clip to the USB memory stick. A VIDEO OK message will flash.
5. After the SAVE SUCCESS message appears, press **ESC** to return to the Archive list.
6. Unplug the USB memory stick from the DVR.

## 5.3 Playing Backup video

Video backed up to a USB memory stick can be played on a personal computer. The backed up video may be in AVI or DVR (NaFS) format.

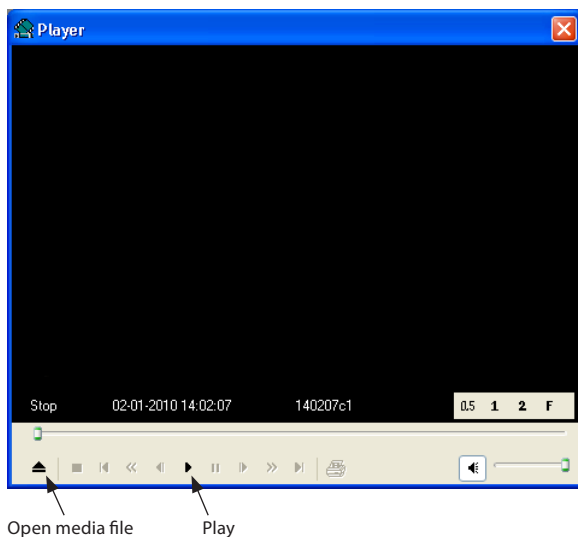
### 5.3.1 Playing Backup video in AVI format

Most MS Windows based PCs include a player for files in AVI format. However, if your computer will not play the AVI file correctly, install the FFDSHOW codec. An FFDSHOW codec installer is included on the DVR CD (see Appendix B).

### 5.3.2 Playing video backup in DVR format

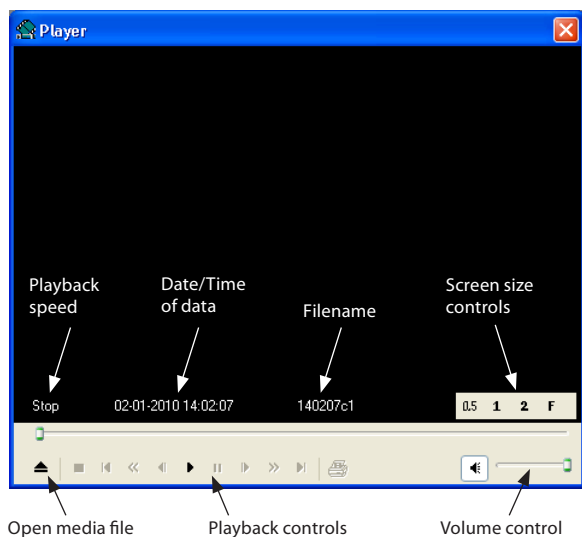
Video backed up in DVR format can be played on a PC with Microsoft Windows using the Player.exe player. Player.exe player is copied to the USB device when you backup a DVR formatted file. To play these files:

1. Insert the USB memory stick with the backed up video into a USB port on your computer.
2. Open the file system on the USB stick with Windows Explorer.
3. Find the directory named with a date code representing the day of the video clip. The directory is named using the format <year><month number><day> (yyyymmdd). Example: 20100201 was recorded on February 2, 2010. Video files in that directory saved in DVR (NaFS) format have filename extension .dvr
4. Double-click player.exe to open the application.



5. Click the open media file icon located in the lower left corner of the Player window.
6. In the Open Media File window, browse the USB memory stick to find the .dvr file you want to play. Click Open.
7. In the Player window, click the Play icon to watch the video.



**VMEVIEWER.exe Player window****NOTE**

To change playback speed, click the ► icon in the Playback controls.  
To select full screen playback, click "F".

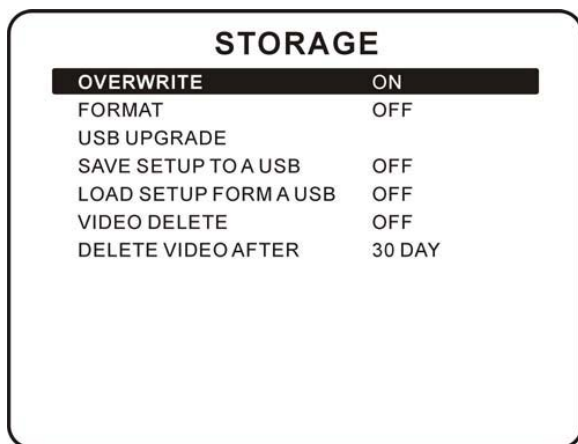


## SECTION 6

**Software Maintenance****6.1 Firmware upgrade**

To upgrade DVR firmware, please contact your distributor to obtain the firmware file and for assistance:

1. Obtain the new firmware file from your distributor.
2. Obtain a USB memory stick with a capacity of 1 GB or larger.
3. Format the memory stick to FAT32.
4. Create a folder on the USB memory stick named "upgrade".
5. Copy the new firmware file to the upgrade folder on the USB memory stick.
6. On the DVR, press the **SETUP** button and enter the password.
7. Open the **STORAGE** window.



**STORAGE screen**

8. Plug the USB memory stick into the USB port on the front of the DVR.

9. On the **STORAGE** window, select **USB UPGRADE** and press **ENTER**. DVR will upgrade to the new firmware automatically.
10. Respond to the screen prompts to allow the USB firmware upgrade process to complete.



**STORAGE setup - USB UPGRADE**

## 6.2 Backup the setup configuration

To backup the DVR setup information, do the following:

1. Obtain a USB memory stick with a capacity of 1 GB or larger.
2. Format the memory stick to FAT32.
3. Insert the USB memory stick into the USB port on the front of the DVR.
4. On the **STORAGE** window, select **SAVE SETUP TO A USB STICK** and press **ENTER**.



5. Wait until the process completes. A CHECK SUCCESS message will appear.



**STORAGE setup - SAVE SETUP TO A USB STICK**

### 6.3 Load setup configuration

To restore backed up setup configuration data, do the following:

1. Insert a USB memory stick containing backed up setup configuration data into the USB port on the front of the DVR.
2. On the STORAGE window, select **LOAD SETUP FROM A USB STICK** and press **ENTER**.
3. Wait until the process completes. A LOAD SUCCESS message will appear.



**STORAGE setup - LOAD SETUP**



## SECTION 7

## MClient – Network Client Viewer

The DVR provides LIVE remote viewing and other features using the MClient software provided on the CD with your DVR, and with the Microsoft® Internet Explorer (IE) browser.

**NOTE**

*On a high-bandwidth network, up to four users can access one DVR simultaneously. On a low bandwidth network, not more than one user should access the DVR at any time.*

*During remote viewing the video frame rate is limited to 1 frame/sec when the DVR is not recording. When the DVR is recording, the video frame rate for remote live viewing is the same as the frame rate at which the DVR is recording.*

### 7.1 Overview

The network client viewer MClient supports remote live viewing, search, playback, backup, and recording.

Before installing MClient, verify that your PC meets the minimum requirements for the specifications shown in the table below. MClient may not perform correctly if the PC does not meet the minimum requirements.

**Table 14. PC requirements for remote monitoring**

PC specification	Minimum requirement	Recommended
CPU	Intel® Pentium® III 500 MHz	Intel Pentium 4 2GHz
Memory	128MB	512MB
Video memory	16MB	64MB
Resolution	1024x768	1024x768
OS	Windows 2000	Windows XP with SP3, Windows Vista, or Windows 7
Network	10/100BASE-T	10/100BASE-T
Others	DirectX 8.1	DirectX 9.0c or newer

#### 7.1.1 Remote access

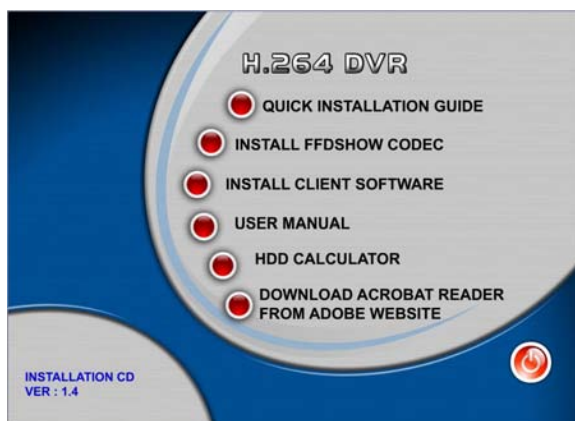
If MClient is used outside the local network, the network router must be setup to port forward three ports to the IP address of the DVR; the WEB PORT, PORT, and PORT + 1. These ports numbers are defined in the NETWORK setup options menu. See paragraph 3.5, NETWORK setup.



## 7.2 MClient Installation

To install MClient software:

1. Log into your PC as a user with administration privileges.
2. Insert the Software CD provided with your DVR into the CD or DVD drive of your PC. Normally the window below will appear.



**DVR Software CD initial window**

3. Click **INSTALL CLIENT SOFTWARE**.

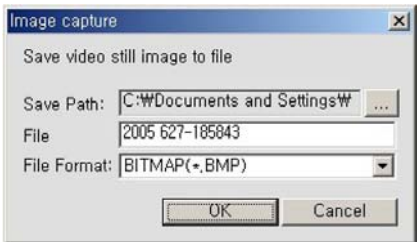
### **NOTE**

*If MClient is already loaded on your PC, clicking **INSTALL CLIENT SOFTWARE** will remove the existing version. After the removal is complete, click **INSTALL CLIENT SOFTWARE** again to load the version provided on the CD.*



4. Follow the on-screen directions to install MClient. An MClient icon, , will appear on the PC desktop.
5. Double click the MClient icon to start the application.

**MClient initial screen****Table 15. MClient viewer controls**

Button	Description
CONNECT	Connect to the DVR
PLAYBACK	Switch to search for and playback a recorded video.
LOCK/ UNLOCK	Lock/unlock all operations of the client software.
DATE & TIME	Display the current date and time.
VOLUME	Use the volume control bar to set the audio level. Audio can be on or muted by clicking the AUDIO icon.
ALARM	Alarm indicator. Lights for 5 seconds if the alarm output is activated on the DVR.
HDD USAGE	DVR HDD storage Indicator.
ZOOM/ FOCUS	Control ZOOM/ FOCUS features on a remote PTZ camera.
PAN/ TILT	Control PAN/ TILT features on a remote PTZ camera.
CAPTURE	<p>Capture a still image. When the capture icon is clicked, the Image Capture pop-up window appears. The still image can be saved in either JPEG or BMP format.</p> 



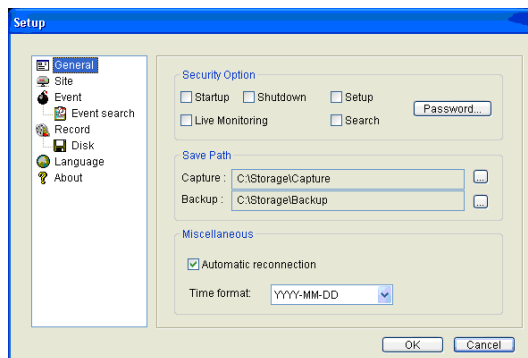
Button	Description
PLAY/PAUSE	Play/pause live video.
RECORDING	Enable or disable recording of live video to local disk.
SETUP	Setup configuration of client software.
EXIT	Exit the client software.

## 7.3 PC MClient setup configuration options

Before using MClient, setup the MClient software configuration.

### 7.3.1 Setup General options

1. On the MClient screen, click **SETUP** to open the Setup window.



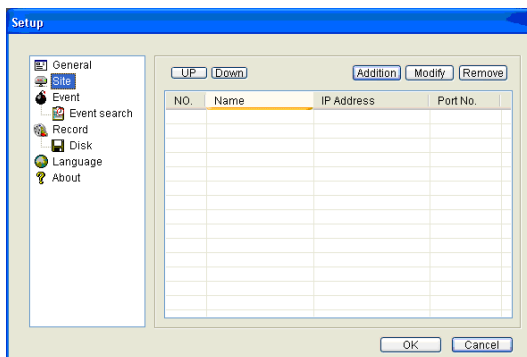
**MClient Setup General window**

2. In the Security Option frame, select the preferred security conditions and set a password. When you access any of the functions shown, you must enter the password.
3. In the Save Path frame, browse for and select folders where image captures and Backup files are saved.
4. In the Miscellaneous frame, check Automatic reconnection if you want to reconnect to the previously connected IP address after a network connection is lost.
5. Select the Time format you prefer from the options available in the pull-down menu.



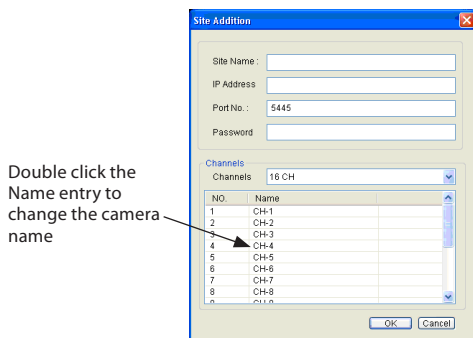
### 7.3.2 Setup Site options

1. In the Setup window, click Site to list sites added to the MClient configuration. Sites can be added to this list, and modified or removed by clicking the buttons at the top of the window.



**MClient Setup Site**

2. Click **Addition** to register another site. See the window below. After parameters are set, click **OK** to include the entry in the Site list.



**Site Modify window**

3. Complete the entries in the Site Addition pop-up window and click **OK** to create a DVR to connect to.
  - a. **Site Name** – Enter any name of your choosing for the DVR

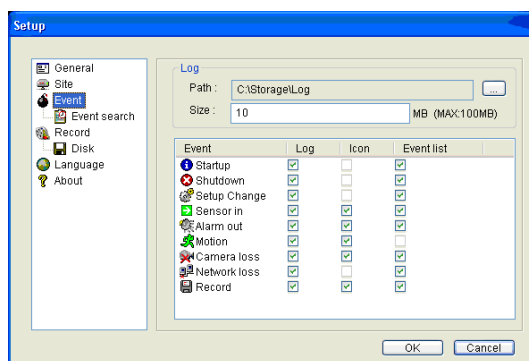


- b. **IP Address** – Enter the IP address of your DVR. If your DVR and PC are on the same local network, use the IP address shown in the DVR SETUP NETWORK option list. If you are accessing your DVR across the Internet, enter the IP address of the router (modem) you use to access the internet from your local network. If the WEB PORT option on the DVR SETUP NETWORK option list is not 80, enter the address in the form: <IP>:<WEB PORT>
- c. **Port No.** – Enter the PORT number shown in the DVR SETUP NETWORK option list.
- d. **Password** – Enter the password assigned setup for your DVR. The default password is 1111.

After creating the Site, the entry will appear in the Site list.

### 7.3.3 Event option

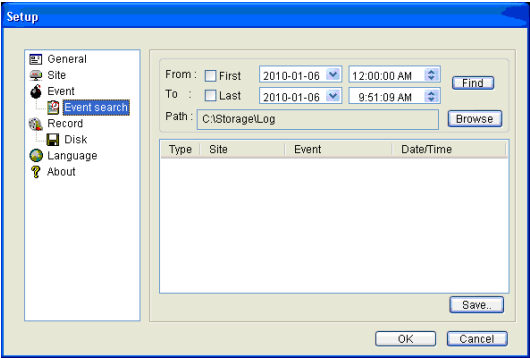
In the Setup menu, click **Event** to specify how events, such as Startup, Shutdown, Camera loss, etc. are treated by Mclient. These events can be entered into a LOG (saved in a log file), displayed as an ICON during Live video, or displayed in an EVENT LIST in LIVE mode. The path to and maximum size of the log file is defined in this window.



**Setup Event window**

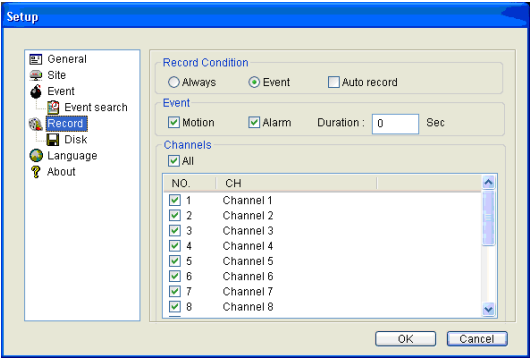
### EVENT SEARCH OPTIONS

The Setup Event search window displays all logged events within a specified time period.



7.3.4 Record options

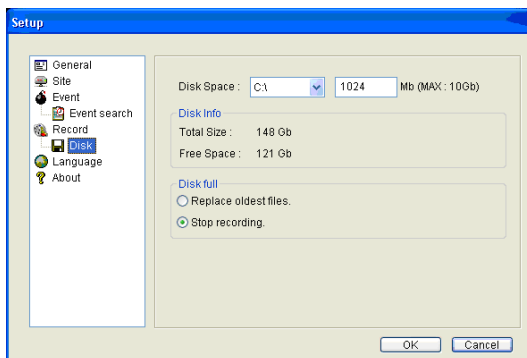
Set the recording method to **Always**, record on **Event** (for Motion and/or Alarm events), or **Auto record**. For Always and Event recording, select all channels or individual channels to record. When the Event method is selected, you can set the event for motion and/or alarm with duration. You can also set each or all channels to record.



Setup Record window

RECORD DISK OPTIONS

In the Setup Record Disk window, select which local disk to use and the disk space to allocate for storage of recordings. Also, choose to overwrite data or stop recording when the allocated disk space is full.



**Setup Record Disk window**

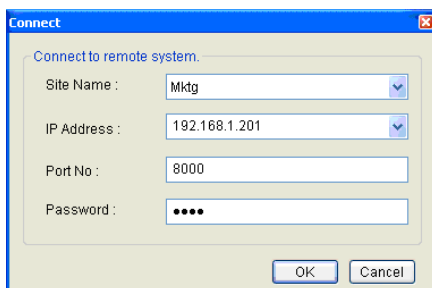
### 7.3.5 Language

In the Setup Language window, select the preferred language from the pull-down list. The default language is English.

## 7.4 MClient – Live view

To view real-time images from your DVR, to the following:

1. Double click the MClient icon on your PC desktop to launch the program.
2. Click **CONNECT**. See the screen capture below.
3. In the Connect pop-up window, click the down arrow in the Site Name field, or the down arrow in the IP Address field, and select the name or address of the site you want to connect to.



4. Click **OK**. Within a few seconds, real-time images from the DVR will appear.



**MClient Live view**

## 7.5 MClient – search and playback view

When MClient is searching for or playing a recorded video, the controls identified on the following screen are significant.



**MClient search controls**

**Table 16. Main controls in Search**

Button	Description
LIVE	Switch to Live Video mode.
DATE TIME	Displays the date and time of the recording selected on the time bar at the bottom of the window.
SEARCH calendar	The calendar shows dates with recorded video in light blue and the selected date in dark blue.
TIMELINE BAR	The timeline shows recorded data in dark blue on the bar. Adjust the time-line scale to playback. Click the play icon to display the recorded video.
- CAPTURE	Capture a still image. When the capture icon is clicked, the Image Capture pop-up window appears. The still image can be saved in either JPEG or BMP format.
- MARK IN	Set the video backup start time.
- MARK OUT	Set the video backup end time.
- BACKUP	Backup the selected recorded video in AVI format.

### 7.5.1 MClient – backup recorded video in AVI format

Use the MClient search viewer to backup recorded video in AVI format:

1. On the MClient search viewer window, set the blue marker on the timeline at the time when you want the backup file to begin recording. Click the Play icon to review the video, if necessary.
2. Click the **MARK IN** button.
3. Set the ending time by dragging the blue marker on the timeline to the ending time for the backup file.
4. Click the **MARK OUT** button. The color of the timeline between the beginning time and ending time will change to dark green.
5. Click the **BACKUP** button. The pop up window shown below will appear. The start and end times can also be set in this window.



### AVI backup specification

6. After selecting a channel for backup, click the **OK** button. The backup will begin.

**SECTION 8****Network – IE Browser Viewer**

The DVR provides remote live monitoring, search, and playback of recorded video. An ActiveX™ control provides a viewer (Web Client) that must be downloaded and installed to interact with the DVR.

This procedure assumes that the DVR and its network are setup for access from a PC across a local LAN and/or remotely through the Internet.

**8.1 Connect to the DVR, download and install Web Viewer**

To interact with your DVR across a network, do the following:

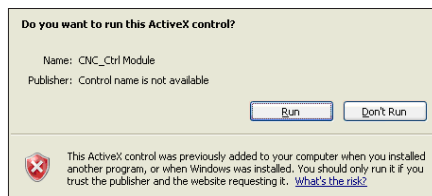
1. Open a Microsoft Internet Explorer window (tab).
2. In the internet address field of the browser, enter the IP address and web port of your DVR in the format:

<IP address>:<port>

If the web port number is 80 (default), the <port> entry is not required.

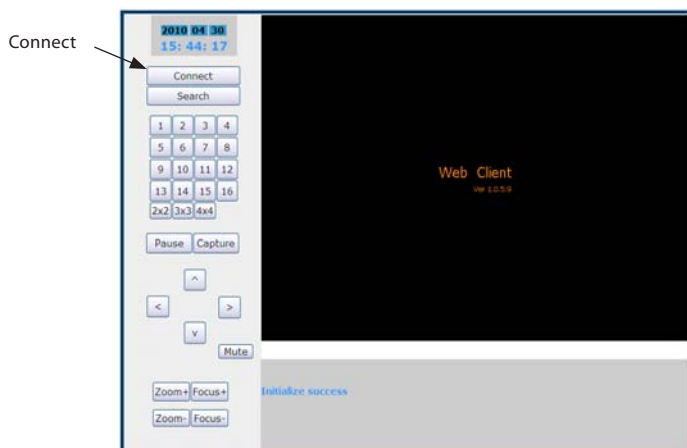
If you are accessing your DVR across the Internet using the DynDNS service (convenient for DVRs with dynamic IP addresses), go to the appropriate DynDNS internet address. See [www.dynDNS.com](http://www.dynDNS.com) for more information about this service.

3. If prompted, follow the prompts to install the program (Web Client) and/or ActiveX control identified by your browser.

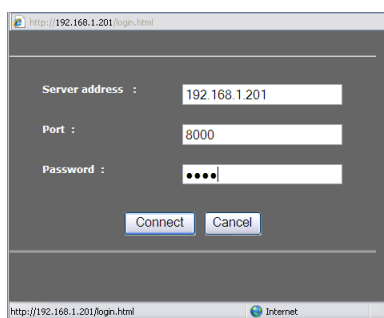


4. Follow the screen prompts to complete the install. After install, the Web Client application will open within the browser window.





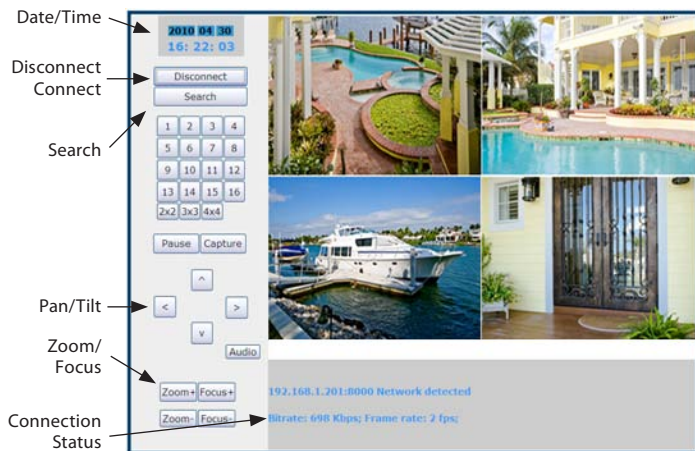
5. Click **Connect**.
6. In the webpage dialog, enter the web IP address of your DVR, the video PORT number (from the Setup SYSTEM menu), and the password. Then click **Connect** in the Dialog pop-up window. A LIVE mode screen will open.



**Web Client server (DVR) login**

## 8.2 LIVE mode

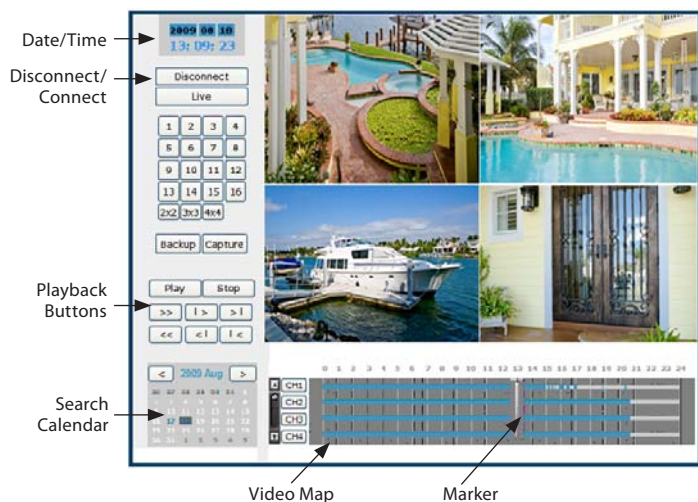
LIVE mode viewing provides real-time images from the cameras connected to the DVR. A description of the screen controls is provided below.

**LIVE mode controls****Table 17. LIVE mode controls**

Name	Description
DATE and TIME	Displays the current date and time.
CONNECT/ DISCONNECT	Connect/disconnect the DVR
SEARCH	Search for recorded video.
PAN and TILT	Use these buttons to control the PAN and TILT features of remote camera.
ZOOM and FOCUS	Use these buttons to control the ZOOM and FOCUS features of remote camera.
CONNECTION STATUS	Shows the client connection information.
Full Screen	Switch to full screen
PAUSE	Pause the display screen.
CAPTURE	Capture the image from the live display.
AUDIO	Site audio can be ON or OFF by clicking the Audio button.

## 8.3 Search and PLAYBACK mode

In the web viewer window, click the **Search** button to change from LIVE mode to search and playback recorded video.

**Main user interface – search and playback****Table 18. Main controls – search and playback**

Name	Description
DATE and TIME	Displays the current date and time.
CONNECT / DISCONNECT	Connect / Disconnect to the DVR
LIVE	Switch to LIVE mode.
BACKUP and CAPTURE	Capture or backup the image from playback.
PLAYBACK BUTTONS	Control playback image
SEARCH CALENDAR	Select data for playback
Video Map	Shows a timeline of where recorded video exists for the date selected.
Marker	Sliding bar to set the start of video playback.
Full Screen (not shown)	Switch to full screen

### 8.3.1 Playback video

To playback recorded video:

1. Click the date in the search calendar. Only days that have recorded video are selectable.

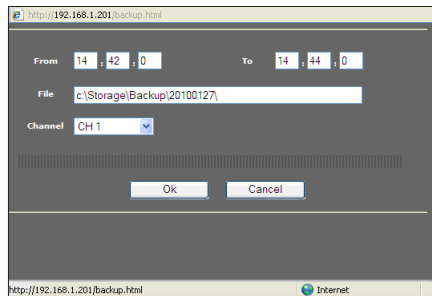


2. Slide the marker bar to the time where you want to start playing.
3. Click **Play**.

### 8.3.2 Backup video clip

To backup recorded video:

1. Click the target date in the Search Calendar. Only days that have recorded video are selectable.
2. Click **Backup**. A capture/backup webpage dialog window will open.



3. Select each field in From and To and enter the start and end times of the video you want to backup.
4. In the File field, enter the directory where you want to store the backed up video file.
5. Open the Channel pull-down list and select the camera channel of the video you want to back up.
6. Click **OK**. The progress bar will change as video is downloading to your PC.



## SECTION 9

## Specifications

Table 19. Specifications

Item			Specification
Video	Input	Channel, Input Level	4 channel, Composite 1.0 Vp-p, 75 Ohm
		Signal Format	NTSC
	Output		1 CH Composite Output / 15 pin D-Sub VGA Output
Audio	Input / Output		4 Line In / 1 Line Out
Alarm	Sensor Input		4 (NC/NO Selectable)
	Alarm Output		1 (Alarm, Motion, Video Loss)
Recording	Compression		H.264
	Multi-operation		TRIPLEX (Playback / Record / Network)
	Resolution		120 fps (352 x 240) / 30 fps (704 x 480)
	Recording quality grade		NORMAL/HIGH/SUPER
	Recording Mode		Continuous / Schedule / Motion / Sensor / Manual
	Motion Detection		Motion detection setup by Grid
Display	Speed		Real Time Display
Playback	Search Mode		Event, Archive, Log, Time Line
Storage	Internal HDD		Serial ATA (Up to 1TB)
	Backup	USB 2.0 memory stick	JPEG, AVI and DVR file formats
		Network	Video clips and still images
Serial port	Camera Control		1 RS-485
Network	Dynamic IP support		Yes
	Network Interface		10/100BASE-T Ethernet (RJ-45)
Client S/W	Functions		Live, Search, Backup
General	Power Source		12 Vdc @ 3.3 A
	Unit Weight		3.5 kg
	Dimension (W x D x H)		17.1" x 13.2" x 2.1" (435 mm x 335 mm x 54 mm)
	Temperature		Operating: 41 °F ~ 104 °F (5 °C ~ +40 °C) Storage: 14 °F ~ 122 °F (-10 °C ~ +50 °C)
	Humidity (operating)		0 - 90%



## APPENDIX A

**HDD Compatibility List**

The hard disk drives included in the following table are functionally compatible with the DMR27U hardware and acceptable for security system applications.

**Table 20. HDD compatibility list**

Manufacturer	Model	Capacity	Buffer
Hitachi*	HDS728080PLAT20	80 GB	2 MB
	HDS721680PLAT80	80 GB	8 MB
	HDT722516DLAT80	160 GB	8 MB
	HDS722516DLAT80	160 GB	8 MB
	HDT722525DLAT80	250 GB	8 MB
	HDT725025VLAT80	250 GB	8 MB
	HDS722525VLAT80	250 GB	8 MB
	HDT725032VLAT80	320 GB	8 MB
	HDP725050GLAT80	500 GB	8 MB
	HDS725050KLAT80	500 GB	8 MB
	HDP725050GLA360	500 GB	16 MB
	HDS721010KLA330	1 TB	32 MB
Maxtor*	6Y080L0	80 GB	2 MB
	6B160P0	160 GB	2 MB
	6Y200P0	250 GB	8 MB
	6L300R0	300 GB	16 MB
Samsung*	SP0822N	80 GB	2 MB
	SP1604N	160 GB	2 MB
	SP2514N/OMD	250 GB	8 MB
	HD300LD	300 GB	8 MB



Manufacturer	Model	Capacity	Buffer
Seagate*	ST3800-12ACE	80 GB	2 MB
	ST31200-25ACE	120 GB	2 MB
	ST3160815AS (Barracuda)	160 GB	8 MB
	ST3160815AV	160 GB	8 MB
	ST3250820AV (Surveillance)	250 GB	8 MB
	ST3250820ACE (Barracuda)	250 GB	8 MB
	ST3250410AS (Barracuda)	250 GB	16 M
	ST3300831ACE	300 GB	8 M
	ST3300820ACE	300 GB	8 M
	ST3300831ACE	300 GB	16 M
	ST3400832ACE	400 GB	8 M
	ST3400820ACE	400 GB	8 M
	ST3400620A	400 GB	16 M
	ST3500630AV (Surveillance)	500 GB	16 M
	ST3500630A	500 GB	16 M
	HDS725050KLAT80	500 GB	8 M
	ST3750840ACE	750 GB	8 M
	ST3750640A	750 GB	16 M
	ST31000340SV	1 TB	32 M
Western Digital*	WD1600BB-22GUA0	160 GB	2 MB
	WD2000BB-00GUA0	200 GB	8 MB
	WD2500BB-00KEA0	250 GB	8 MB
	WD2500JB	250 GB	8 MB
	WD2500AAKS	250 GB	16 MB
	WD3202ABYS	320 GB	16 MB
	WD5000AACS	500 GB	16 MB
	WD7500AACS	750 GB	16 MB
	WD10EACS	1 TB	16 MB

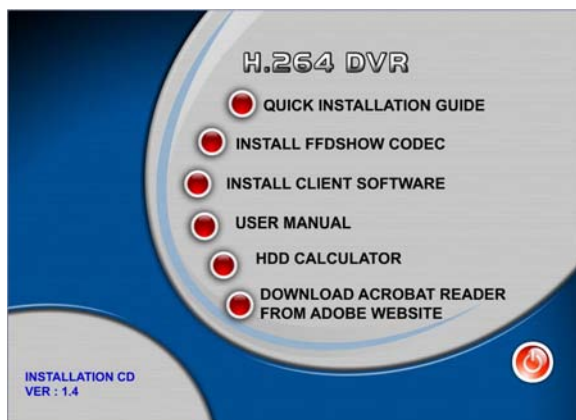


### APPENDIX B

## Install FFDSHOW Codec

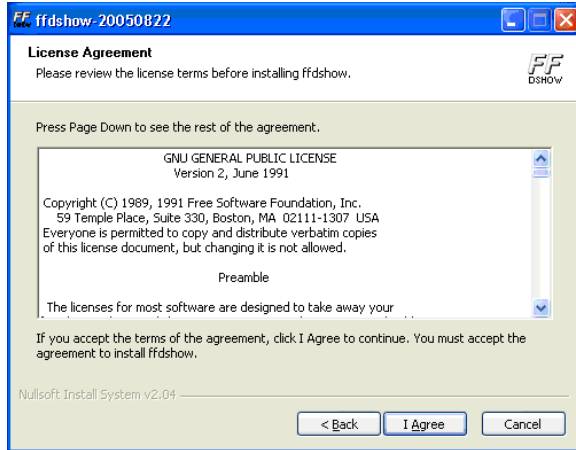
The FFDSHOW codec installer is provided on the software CD included with your DVR. Install this codec if the software on your PC does not play AVI formatted files backed up from the DVR. To install FFDSHOW:

1. Insert the Software CD into an optical drive in your PC. Play or AutoPlay the disk if the following window does not automatically open.

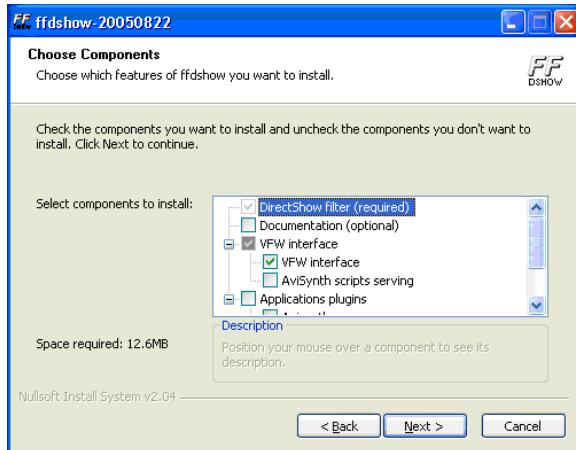


2. Click **INSTALL FFDSHOW CODEC**.
3. In the next window that opens, select the language you prefer from the drop down list, and then click **OK**.
4. When the "Welcome to the ffdshow Setup Wizard" window appears, click **NEXT**.
5. When the "License Agreement" window appears, read the complete agreement carefully. If you accept the terms of the agreement, click **I AGREE**. Otherwise, click **CANCEL** to exit this procedure.





6. In the "Choose Components" window, accept the default settings and click **NEXT**.

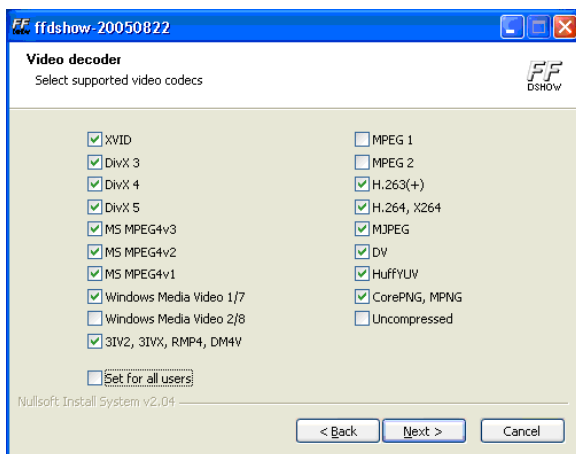


## NOTE

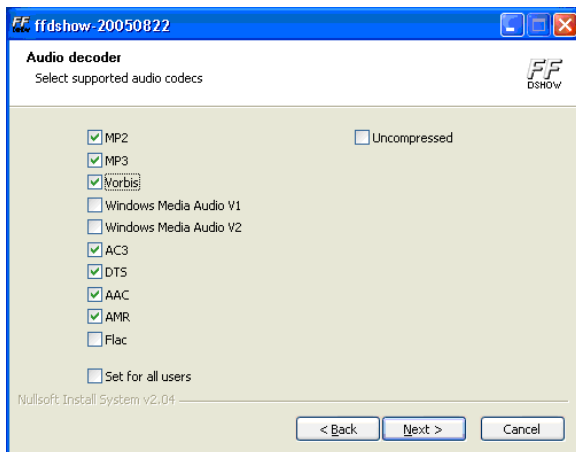
Disk space required for installation with default settings is 12.6 MB.



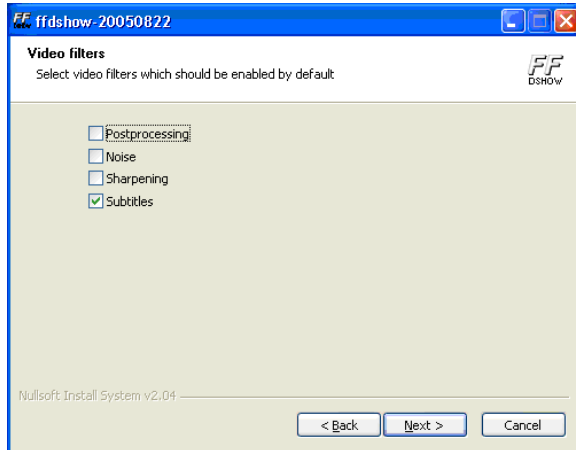
7. In the “Video decoder” window, uncheck the codecs you do not want to load. Click **NEXT**.



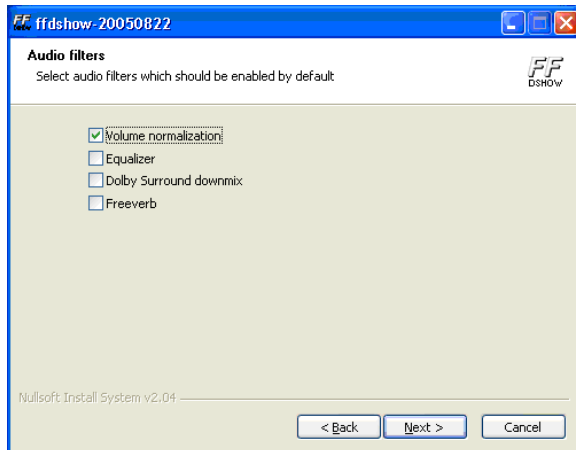
8. In the “Audio decoder” window, uncheck the codecs you do not want to load. Click **NEXT**.



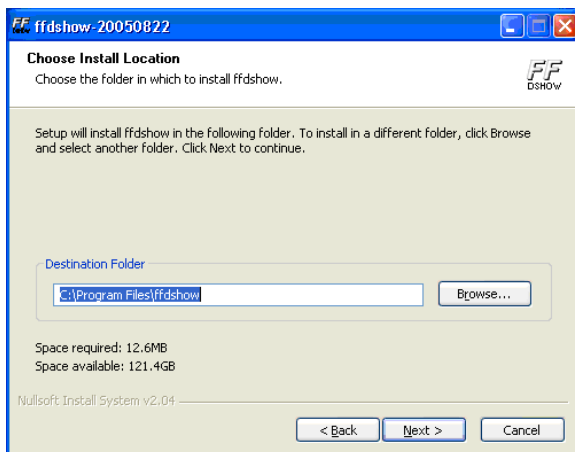
9. In the “Video filters” window, uncheck **Processing** and select **Subtitles** as shown below. Click **NEXT**.



10. In the “Audio filters” window, accept the default settings and click **NEXT**.



11. In the “Choose Install Location” window, accept the default Destination Folder and then click **NEXT**.



12. In the "Choose Start Menu Folder" window, define the folder you prefer for ffdshow and then click **NEXT**.
13. Wait until the installation is complete and then click **NEXT**. Click **FINISH** in the setup wizard window.

